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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,849	09/28/2001	Brian Ellis	608-312	2377

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EXAMINER
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OH, TAYLOR V

ART UNIT	PAPER NUMBER
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1625

DATE MAILED: 10/02/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/964,849

Applicant(s)

ELLIS ET AL.

Examiner

Taylor Victor Oh

Art Unit

1625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

***Final Rejection***

**The Status of Claims**

Claims 1-23 are pending.

Claims 1-23 have been rejected.

**Specification**

The objection of the disclosure has been withdrawn due to the correction made in the specification.

**Claim Objections**

The objection of claims 8, 9, 11, 19, 20, and 23 has been withdrawn due to the modification made in the claims.

**Claim Rejections-35 USC 112**

The rejection of claims 1-3 under 35 USC 112, second paragraph, has been withdrawn due to applicants' convincing argument in the amendment. However, the rejection of claims 1-3 under 35 USC 112, first paragraph, has been maintained due to applicants' failure to modify in the claims.

**Claim Rejections-35 USC 103**

1. Applicants' argument filed 7/17/2003 have been fully considered but they are not persuasive.

2. Rejection of Claims 1, 4, 7, 11-23 under 35 U.S.C. 103(a) as being unpatentable over McCain, Jr. et al (U.S. 5,162,578) in view of Manyik et al (U.S. 4,899,003).

Rejection of Claims 2, 3, 5, 6, and 8-10 under 35 U.S.C. 103(a) as being unpatentable over Fisher et al (U.S. 3,458,406) in view of Manyik et al (U.S. 4,899,003).

The rejection of claims 1, 4, 7, and 11-23 under 35 U.S.C. 103(a) as being unpatentable over McCain, Jr. et al (U.S. 5,162,578) in view of Manyik et al (U.S. 4,899,003) is maintained with the reasons of the record in paper no. 6.

The rejection of claims 2, 3, 5, 6, and 8-10 under 35 U.S.C. 103(a) as being unpatentable over Fisher et al (U.S. 3,458,406) in view of Manyik et al (U.S. 4,899,003) is maintained with the reasons of the record in paper no. 6.

#### In Response to the Argument

3. The applicants argue the following issues:

1. the McCain does not suggest that the ratio of ethylene to acetic acid in the product stream may be adjusted by controlling the concentration of ethylene in the feed ; furthermore, ethylene is only an optional and not a required feed component;

2. the Manyik has no ethylene in the initial feed, only ethane and does not suggest that that the ratio of ethylene to acetic acid in the product stream may be adjusted by controlling the concentration of ethylene in the feed;

3. the combined teachings of McCain and Manyik would not have been motivated to arrive at the current invention;
4. one of ordinary skill would not have been motivated to combine Manyik and Fisher since each of them relates to completely different technical fields;
5. even if Manyik and Fisher were combined, the Manyik is completely silent adjusting the ratio of ethylene to acetic acid through control of the concentration of alkene in the feed;
6. the combined teachings of Manyik and Fisher would not have been motivated to arrive at the current invention since there is no disclosure of an alkane and alkene oxidation reaction in Fisher.

The applicants' argument have been noted, but these arguments are not persuasive.

First, with regard to the first argument, the Examiner has noted applicants' argument. However, on the contrary to applicants' assertion, the McCain reference does teach that according to Ex. 2 (see col. 11, lines 55-66), the oxidation of ethylene alone was carried out; the gas feed introduced into the reactor was made of 8% ethylene. the selectivity to acetic acid from ethylene was 74 mole percent. From this, it becomes clear that ethylene is not an optional one, but also a required feed component. Furthermore, it is quite possible that the ratio of ethylene to acetic acid in the product stream may be adjusted by controlling the concentration of ethylene in the feed.

Therefore, the McCain reference is relevant to the claimed invention.

Second, regarding the second argument, the Examiner has noted applicants' argument. However, McCain, Jr. et al does point out that either of ethylene or ethane can be used in the process of producing acetic acid. Also, Manyik has been used for the secondary reference to supplement the primary McCain, Jr. et al as to the oxidation of an alkane to the corresponding alkene and carboxylic acid. In addition, both processes can be employed to produce acetic acid either by choosing ethane or ethylene. Therefore, the Manyik reference is still relevant to the claimed invention.

Third, concerning the third argument, the Examiner has noted applicants' argument. However, regardless of arriving at the current invention, there is a motivation to combine the two references. Manyik et al does teach the use of ethane in the process of producing ethylene and acetic acid, whereas McCain, Jr. et al does point out that of either ethylene or ethane in the process of producing acetic acid. Both processes can be employed to produce acetic acid either by choosing ethane or ethylene. Furthermore, the Manyik et al does indicate that the addition of water to the input gaseous stream of each stage results in the high acetic acid selectivity with reducing the low ethylene selectivity. Therefore, it would have been obvious to the skillful artisan in the art to have motivated to incorporate the teachings of Manyik's et al ethane and addition of water to each stage into the McCain, Jr. et al process of producing acetic acid, thereby increasing the productivity of acetic acid.

Fourth, concerning the fourth argument, the Examiner has noted applicants' argument. However, on the contrary to applicants' assertion, The Manyik et al is directly related to the process of producing intermediate compounds, such as ethylene and acetic acid, whereas the

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Fisher et al has focused the production of the final products, alkyl carboxylate and alkenyl carboxylate by using those ethylene and acetic acid intermediates. They are in a relationship between the intermediates and the final products. Therefore, if the skilled artisan in the art had desired to extend from the process of ethylene and acetic acid to that of producing both alkyl carboxylate and alkenyl carboxylate, it would have been obvious to the skillful artisan in the art to have motivated to incorporate the teachings of Manyik's et al into the Fisher et al process. This is because the skilled artisan in the art would expect the combined processes to be successful as shown in the Fisher et al process.

Fifth, regarding the fifth argument, the Examiner has noted applicants' argument. However, Manyik et al does disclose that the molar ratio of alkene to carboxylic acid ( 12.11 : 4) can be obtained from the total output (see col. 15, Table 4). Furthermore, Fisher et al does teach at least the process of preparing vinyl acetate by reacting ethylene with acetic acid in the presence of the reduction-oxidation catalyst. Moreover, they are in a relationship between the intermediates and the final products. Thus, it is quite possible that, in order to produce vinyl acetate prepared by reacting ethylene with acetic acid, the ratio of ethylene to acetic acid in the product stream may be adjusted by controlling the concentration of ethylene in the feed .

Sixth, concerning the sixth argument, the Examiner has noted applicants' argument. However, Manyik et al does teach the disclosure of an alkane and alkene oxidation reaction and the process of producing ethylene and acetic acid by reacting ethane and oxygen in the presence of the catalyst system. Also, Fisher et al does teach the process of separating

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methyl acetate and ethyl acetate from vinyl acetate prepared by reacting ethylene with acetic acid in the presence of the reduction-oxidation catalyst. Regardless of arriving at the current invention, there is a motivation to combine the two references. The Manyik et al is directly related to the process of producing intermediate compounds, such as ethylene and acetic acid, whereas the Fisher et al has focused the production of the final products, alkyl carboxylate and alkenyl carboxylate by using those ethylene and acetic acid intermediates. They are in a relationship between the intermediates and the final products. Therefore, if the skilled artisan in the art had desired to extend from the process of ethylene and acetic acid to that of producing both alkyl carboxylate and alkenyl carboxylate, it would have been obvious to the skillful artisan in the art to have motivated to incorporate the teachings of Manyik's et al into the Fisher et al process. This is because the skilled artisan in the art would expect the combined processes to be successful as shown in the Fisher et al process.

Therefore, the Examiner maintains the rejection of all the claims

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period



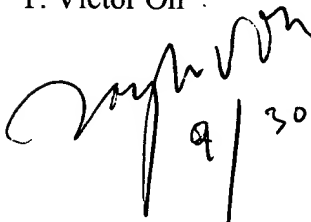
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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


4.. Any inquiry concerning this communication or earlier communications from the examiner should be directed to T. Victor Oh whose telephone number is (703) 305-0809. The examiner can normally be reached on Monday through Friday from 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alan Rotman , can be reached on (703) 308-4698. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-4556.

T. Victor Oh



9/30/03



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